IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	David HAYNER, et al.		
Title:	DECOUPLING TECHNIQUE FOR OPTICAL PICKUP UNITS		
App. No.:	10/600,637	Filed:	June 20, 2003
Examiner:	Kim Kwok CHU	Group Art Unit:	2627
Customer No.:	34814	Confirmation No.:	7168
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Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

REMARKS IN SUPPORT OF THE PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

In response to the Final Office Action mailed December 13, 2006 (hereinafter "the Final Action") and pursuant to the Notice of Appeal and Pre-Appeal Brief Request for Review submitted herewith, the Applicants request review of the following issues on appeal. In order to facilitate full consideration of the remarks filed herewith, the Applicants respectfully request that the Art Unit Supervisor designate a panel composed of at least three examiners.

The Final Action fails to provide any rationale for its rejection of claims 21 and 23

The Final Action erroneously assumes that claims 21 and 23 only have limitations similar to claims 1-12 (now canceled) and therefore rejects claim 21 under the same rationale as applied to claims 1-12. However, as discussed at pages 7, 8, and 10 of the Response mailed March 12, 2007 (hereinafter, "the Previous Response"), claims 21 and 23 recite a number of features distinct from the subject matter of claims 1-12. As also discussed in the Previous Response, the Final Action fails to fails to provide any basis for how Ikeda can be interpreted to disclose at least the above-identified features of claims 21 and 23 not found in claims 1-12 and therefore the Final Action fails to provide a *prima facie* case of anticipation with respect to particular combinations of features recited by claims 21 and 23.

Ikeda fails to disclose or suggest an output to provide a signal with decoupling compensation for a first actuator based on the representation of the second actuator position as recited by claim 21

Claim 21 recites the feature "an output to provide a signal with decoupling compensation for a first actuator based on the representation of the second actuator position." As discussed at

pages 8 and 9 of the Previous Response, a thorough review of the disclosure of Ikeda reveals that Ikeda fails to disclose or suggest that a signal is output with decoupling compensation for one actuator based on a representation of a position of another actuator as provided by claim 21. At page 3, the Final Action addresses a related issue by asserting that Ikeda teaches the "tracking servo is constantly modified based on a [sic] previous tracking ***and focusing*** conditions," but the Final Action fails to cite any passage of Ikeda in support of this reading or provide any explanation as to how Ikeda would be interpreted by one of ordinary skill in the art to support this reading. Further, the Applicants are unable to identify any passage of Ikeda that could be reasonably interpreted to teach that the tracking servo is modified based on both tracking conditions and focusing conditions (i.e., the position of the focus servo as another actuator) and thus the Office's rationale with respect to Ikeda disclosing a signal having decoupling compensation for a first actuator based on a second actuator position is unsupported by the disclosure of Ikeda.

In tacit acknowledgment that Ikeda fails to expressly disclose decoupling compensation for a first actuator based on the representation of a second actuator position, the Final Action turns to an inherency rationale instead and states at page 2 that "Ikeda's servo signal ***inherently*** has the properties of the amended features such as . . . 'providing with decoupling compensation signal" (emphasis added). It is noted that the Final Action fails to provide any basis in fact or technical reasoning to support the asserted determination that the provision of decoupling compensation "necessarily flows" from the disclosure of Ikeda, much less that a signal having decoupling compensation for a first actuator based on a second actuator position "necessarily flows" from the disclosure of Ikeda. Thus, the Final Action fails to establish a *prima facie* case for its assertions that this feature is inherent to the teachings of Ikeda. Further, as noted above, no reasonable interpretation of Ikeda can in fact support any assertion that Ikeda discloses decoupling compensation as would be understood by one of ordinary skill in the art and from the context of the disclosure and claims of the present application.

Ikeda fails to disclose or suggest a focus control command excites the tracking control loop and a tracking control command excites the focus control loop as recited by claim 23

Claim 23 recites the feature "wherein a focus control command excites the tracking control loop and a tracking control command excites the focus control loop." Ikeda fails to disclose or even suggest the excitation of any analog to a tracking control loop disclosed by

Ikeda by any analog to a focus control command. Likewise, Ikeda also fails to disclose or even suggest the excitation of any analog to a focus control loop disclosed by Ikeda by any analog to a track control command.

Ikeda fails to disclose or suggest a decoupler configured to produce a modified focus control command from a focus control command and a tracking control command, and configured to produce a modified tracking control command based on the tracking control command and the focus control command as recited by claim 23

Claim 23 also recites the feature of "a decoupler configured to produce a modified focus control command from the focus control command and the tracking control command, and configured to produce a modified tracking control command based on the tracking control command and the focus control command." The disclosure of Ikeda does not support the Final Action's assertion at pages 3-4 that the "tracking servo is constantly modified based on previous tracking ***and focusing*** conditions." Rather, no disclosure is found in Ikeda for modifying a tracking servo based on both tracking conditions and focusing conditions. Thus, no disclosure is found in Ikeda for producing a modified focus control command from a focus control command and a tracking control command, or vice versa, as provided by claim 23.

Ikeda fails to disclose or suggest a modified focus control command has a different excitation of a tracking control loop than a focus control command and wherein a modified tracking control command has a different excitation of a focus control loop than a tracking control command as recited by claim 23

Claim 23 further recites the feature of "wherein the modified focus control command has a different excitation of the tracking control loop than the focus control command and wherein the modified tracking control command has a different excitation of the focus control loop than the tracking control command." As Ikeda fails to disclose or suggest the modified focus control command or the modified tracking control command, Ikeda necessarily fails to disclose or suggest these features. Moreover, even if it is assumed, *arguendo*, that Ikeda teaches that the "tracking servo is constantly modified based on previous tracking and focusing conditions," Ikeda fails to disclose or suggest that signal used to control the tracking servo is modified, much less that the signal after modification has a different excitation of a control loop than before modification. Thus, Ikeda fails to disclose or even suggest a modified focus control command having a different excitation of a tracking control loop than the focus control command from which it is based, or a modified tracking control command having a different excitation of a

focus control loop than the tracking control command from which it is based as provided by claim 23.

Ikeda fails to disclose or suggest determining cross-coupling characteristics of a focus actuator and a tracking actuator as recited by claims 26 and 36

Claim 26 recites the feature "determining cross-coupling characteristics of a focus actuator and a tracking actuator" and claim 36 recites similar features. The Final Action references Fig. 3A of Ikeda and asserts that "loop signals are cross coupled connections" and that the "servo loop characteristics is [sic] the cross-coupling characteristics." *Final Action*, p. 7. It is noted that the Final Action asserts that "loop signals" are "cross coupled connections" without any basis in fact or technical reasoning in support of this asserted equivalence and thus the Final Action fails to establish sufficient support for its interpretation. Further, one of ordinary skill in the art will appreciate that a loop signal by itself is not a cross-coupled connection as there is nothing for it to cross-couple with. Thus, contrary to the assertions of the Final Action, Ikeda fails to disclose or even suggest the determination of cross-coupling characteristics of either of a focus actuator or a tracking actuator, much less both. In fact, the term "cross-couple," its variants and its analogs do not appear in the disclosure of Ikeda in any form.

Ikeda fails to disclose or suggest determining a decoupling matrix to decouple the focus actuator and the tracking actuator as recited by claims 26 and 36

Claim 26 further recites the feature "determining a decoupling matrix to decouple the focus actuator and the tracking actuator" and claim 36 recites similar features. The Final Action asserts at pages 7-8 that Fig. 3A of Ikeda discloses that "DSP 140 and servo processor 142 include decoupling-matrix of tracing an focusing." It is noted that description of the rationale or citing of a particular passage of Ikeda is provided by the Final Action in support of its interpretation of the DSP 140 and the servo processor 142 has including a "de-coupling matrix of tracing and focusing." In fact, this feature is not found in Ikeda. Nowhere in Ikeda do the term "decouple" or "matrix" or their analogs and variants appear. Further, Ikeda fails to disclose a matrix of any kind used to decouple a focus actuator and a tracking actuator.

Ikeda fails to disclose or suggest a decoupler configured to decouple the focus actuator from the tracking actuator by reducing signal cross coupling as recited by claim 31

Claim 31 recites the feature of "a decoupler configured to decouple the focus actuator from the tracking actuator by reducing signal cross coupling." As discussed at page 13 of the Previous Response, the Final Action erroneously interprets the gain/phase adjustment circuit of

Fig. 4 of Ikeda as the decoupler and erroneously interprets the gain/phase error adjustment taught by Ikeda as reducing signal cross coupling. This interpretation is unsupported by the disclosure of Ikeda and inconsistent with the knowledge of one of ordinary skill in the art.

Ikeda fails to teach that the gain adjustment and phase error adjustment result in the reduction of signal cross-coupling. Rather, Ikeda teaches that a focus error signal FES is generated from the signal reproduced from the optical head 1 and that that the gain adjustment applied to the focus error signal FES is used to correct inconsistency among the individual optical heads 1. *Ikeda*, col. 8, lines 13-16 and 18-22 ("[t]he gain of the gain adjusting circuit 3 is controlled by a control signal from the controller 8, and the inconsistency among the individual optical heads 1 is corrected."). One of ordinary skill in the art will readily appreciate that the application of the gain adjustment to correct inconsistency among individual optical heads does not decouple a focus actuator from a tracking actuator, nor does it reduce signal cross-coupling.

Turning to the phase compensation referenced by the Final Action, Ikeda is silent as to the intent or effect of the "phase compensation process" performed on the focus error signal FES by the phase compensation circuit 9 of Fig. 4 of Ikeda. *See, e.g., Ikeda*, col. 8, lines 35-58 (note absence of description of utility of phase compensation). Regardless, Ikeda fails to disclose or even suggest that the phase compensation performed for the focus error signal FES is based in any manner on the tracking control and thus one of ordinary skill in the art will readily appreciate that the phase compensation process of Ikeda does not have the effect of decoupling the focus actuator from the tracking actuator nor does it result in a reduction of signal cross-coupling.

Conclusion

As discussed above, the Office fails to establish that the cited references disclose or suggest each and every element recited by any of the pending claims. Accordingly, reconsideration and withdrawal of these rejections is respectfully requested.

Respectfully submitted,

/Ryan S. Davidson/ March 13, 2007
Ryan S. Davidson, Reg. No. 51,596 Date
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